would be blocked from initiating PCS services in more than 40% of the New York area without microwave relocation. Under the 2 Lic/40 MHz allocation structure, by contrast, Licensee A could initiate PCS services at more than 88% of the New York area without microwave relocation.

Six different spectrum availability maps are provided in each tabbed section. The first three maps demonstrate spectrum availability for Licensee A under each of the three allocation structures assuming no microwave links have been relocated. The second three maps demonstrate spectrum availability for Licensee A under each of the three allocation structures assuming three microwave links have been relocated.

To examine a particular map, read the title block in the lower right hand corner. The allocation structure used for each map is listed in the title block, above the printing date and the market name. The map legend is in the upper left hand corner of the map. The legend indicates the color coding scheme used to depict spectrum availability at each grid point on the map.[20] Purple indicates areas with no spectrum available for PCS Licensee A. Blue indicates areas with 0.1 to 10 MHz of spectrum available for Licensee A. Green indicates areas with 10.1 to 20 MHz of spectrum available for Licensee A. Yellow indicates areas with more than 20 MHz of spectrum available for Licensee A. Also listed at the bottom of the legend is the number of "worst case" microwave paths relocated for the particular map.

In each tabbed section, the following exhibits are provided in order:

[20]The color coding scheme is the same across all maps.

Chart 1:

Percentage of area with no spectrum available for each PCS licensee under each allocation structure with no microwave links relocated.

Chart 2:

Percentage of area with no spectrum available for each PCS licensee under each allocation structure with 0, 1, 2 and 3 microwave links relocated.

Map 1:

Licensee A spectrum availability, 2 Lic/40 MHz, no microwave links relocated.

Map 2:

Licensee A spectrum availability, 3 Lic/30 MHz, no microwave links relocated.

Map 3:

Licensee A spectrum availability, 5 Lic/20 MHz, no microwave links relocated.

Map 4:

Licensee A spectrum availability, 2 Lic/40 MHz, three microwave links relocated.

Map 5:

Licensee A spectrum availability, 3 Lic/30 MHz, three microwave links relocated.

Map 6:

Licensee A spectrum availability, 5 Lic/20 MHz, three microwave links relocated.

B. Areas With No Spectrum Available For PCS

As discussed above, in order to expedite the initiation of PCS services, it is necessary to adopt an allocation structure that minimizes areas with no spectrum available for PCS. Although the tables at the end of the report text provide the percentages of areas with no spectrum available for each licensee, it is useful to average these percentages

across licensees to obtain a direct comparison of the three allocation structures.

The following table allows a comparison of spectrum availability averaged across all licensees:

Percentage of Areas with No Spectrum Available for PCS

No microwave links relocated

	2 Lic/40 MHz	3 Lic/30 MHz	5 Lic/20 MHz
	% Averaged Across All Licensees	% Averaged Across All Licensees	% Averaged Across All Licensees
New York	11.8	20.0	29.7
Los Angeles	25.8	30.6	46.3
Chicago	20.8	30.1	43.2
Washington, DC	1.0	4.7	9.6
Philadelphia	4.8	11.0	18.8
Detroit	6.0	10.2	16.3
Boston	3.7	6.7	13.1
Dallas	13.4	18.0	32.1
Houston	19.8	25.7	36.5
Miami	10.2	12.6	26.3
San Francisco	17.9	24.7	35.9
Average	12.3	17.6	28.0

Averaged across all licensees in all eleven markets, with no microwave links relocated, only 12.3% of the area has no spectrum available for PCS under the 2 Lic/40 MHz allocation structure. This number increases to 17.6% for the 3 Lic/30 MHz allocation structure and to 28.0% for the 5 Lic/20 MHz allocation structure.

Examining the variability of spectrum across licensees under a given allocation structure also allows a comparison of the fairness of the allocation structures. For example, the worst case variability of spectrum availability for the 2 Lic/40 MHz allocation structure is in Dallas. Examining the first table following the report text (and the first chart in the Dallas tabbed section) reveals that the

percentage of area with no spectrum available for Licensee A (2 Lic/40 MHz, no microwave links relocated) is only 8.5%, while the percentage is 18.4% for Licensee B. The average is 13.4% with a standard deviation of 4.9%. For the 5 Lic/20 MHz case in the same city, the percentage of area with no spectrum available for Licensee B is only 15.0% while this figure goes to 49.9% for Licensee D. This is a difference in spectrum availability of nearly 35% of the Dallas area. The average is 32.1% with a standard deviation of 11.4%.

The following table allows a comparison of the standard deviations from the average percentage of area with no spectrum available averaged across all licensees:

Standard Deviation from Average

Percentage of Areas with No Spectrum Available for PCS

No microwave links relocated

	2 Lic/40 MHz	3 Lic/30 MHz	5 Lic/20 MHz
	Standard Deviation %	Standard Deviation %	Standard Deviation %
New York	0.0	4.5	9.1
Los Angeles	2.1	3.5	6.9
Chicago	4.8	7.4	8.7
Washington, DC	1.0	0.3	4.4
Philadelphia	1.4	6.8	8.2
Detroit	2.4	2.4	5.4
Boston	3.3	3.4	6.8
Dallas	4.9	4.5	11.4
Houston	1.6	3.8	6.5
Miami	1.5	2.5	5.9
San Francisco	2.5	2.1	4.5
Average	2.3	3.7	7.1

Averaged across all licensees in all eleven markets, with no microwave links relocated, the standard deviation under the 2 Lic/40 MHz allocation structure is only 2.3%. This number

increases to 3.7% for the 3 Lic/30 MHz allocation structure and to 7.1% for the 5 Lic/20 MHz allocation structure.

C. Average Spectrum Availability

Averaging spectrum availability can obscure extremes that should not be ignored in policy decisions. For example, if 40 MHz is available for PCS in one area and zero MHz is available in another, the average availability is 20 MHz. This average availability appears to indicate that enough spectrum has been allocated to allow the immediate initiation of PCS services, but hides the fact that microwave relocations are required to free up spectrum in the area with no spectrum available. However, average spectrum availability does allow a comparison of the allocation structures.

The computer program utilized in this report averaged spectrum availability across all grid points in each market. The following table shows the average amount of spectrum available for PCS in each market for each spectrum allocation:

Average Spectrum Availability for PCS

No microwave links relocated

	2 Lic/40 MHz	3 Lic/30 MHz	5 Lic/20 MHz
	MHz	MHz	MHz
New York	24.8	18.5	12.2
Los Angeles	18.2	13.5	9.0
Chicago	19.3	14.7	9.8
Washington, DC	34.7	26.2	17.5
Philadelphia	28.9	21.2	14.1
Detroit	29.3	22.5	15.2
Boston	33.9	25.4	16.9
Dallas	24.3	18.3	12.2
Houston	21.2	16.2	11.1
Miami	25.3	19.3	12.8
San Francisco	22.7	17.1	11.3
Average	25.7	19.4	12.9

Averaged across all licensees in all eleven markets, with no microwave links relocated, the 2 Lic/40 MHz allocation structure yields 25.7 MHz of spectrum available for PCS. This number drops to 19.4 MHz for the 3 Lic/30 MHz allocation structure and to 12.9 MHz for the 5 Lic/20 MHz allocation structure. For all three allocation structures, on the average, between 64% and 65% of the spectrum allocated to each PCS licensee is available for PCS.

Although the 2 Lic/40 MHz allocation structure provides on average 18.2 MHz of available spectrum for PCS (assuming no microwave links relocated), Licensee A has no spectrum available at 23.7% of the area. Under the 5 Lic/20 MHz allocation structure, only 9.0 MHz of spectrum is available for PCS (assuming no microwave links relocated). Under this structure, Licensee A has no spectrum available at 40.5% of the area. Comparing the first and third maps from the Los Angeles tabbed section reveals that only 141 blocks of a total of 595 blocks (526 grid points minus 30 over-water points) are purple under the 2 Lic/40 MHz allocation structure while 241 of 595 blocks are purple under the 5 Lic/20 MHz structure.

IX. Conclusions

This report was prepared to provide information on PCS spectrum availability in the 1850-1990 MHz band shared with OFS microwave. The impact on spectrum availability of the amount of spectrum allocated for each PCS licensee is demonstrated in charts, maps and tables. APC committed its resources to this project with the belief that policy decisions on PCS allocations should be based on spectrum availability facts and not on speculation or anecdotal evidence.

Three broad conclusions can be drawn from the data presented herein;

1. In a shared spectrum environment, reducing the amount of spectrum allocated to each PCS licensee increases the percentage of areas with no spectrum available.

2. In a shared spectrum environment, reducing the amount of spectrum allocated to each PCS licensee and increasing the number of licensees per market, increases the variability of spectrum availability between licensees.

3. In a shared spectrum environment, on the average, only a percentage of the spectrum allocated to each PCS licensee is actually available for PCS services.

The data presented herein demonstrate the magnitude of the differences between the allocation structures in these three areas.

The technical parameters utilized in the study are based upon sound engineering assumptions and thus the data provided herein are accurate for the stated purposes.

Percentage of Areas with No Spectrum Available for PCS

No "worst case" microwave links relocated

	Licensee A	Licensee B	Licensee C	Licensee D	Licensee E
New York					
2 Lic/40 MHz	11.8	11.8			
3 Lic/30 MHz	23.7	13.6	22.6		
5 Lic/20 MHz	40.4	17.8	20.1	37.3	32.9
Los Angeles					
2 Lic/40 MHz	23.7	27.9			
3 Lic/30 MHz	27.6	28.6	35.5		
5 Lic/20 MHz	40.5	55.5	37.8	53.1	44.7
Chicago					
2 Lic/40 MHz	16.0	25.6			
3 Lic/30 MHz	21.1	29.9	39.3		
5 Lic/20 MHz	40.9	33.5	48.7	57.1	36.0
Washington, D.C.					
2 Lic/40 MHz	0.0	2.1			
3 Lic/30 MHz	4.8	5.0	4.2		
5 Lic/20 MHz	18.4	6.9	8.0	7.8	6.7
Philadelphia					
2 Lic/40 MHz	6.2	3.4			
3 Lic/30 MHz	7.0	5.3	20.6		
5 Lic/20 MHz	13.0	14.1	9.6	28.3	29.0
Detroit					
2 Lic/40 MHz	8.4	3.6			
3 Lic/30 MHz	12.4	11.2	6.9		
5 Lic/20 MHz	22.9	20.0	18.2	12.4	8.1
Boston					
2 Lic/40 MHz	0.4	6.9			
3 Lic/30 MHz	4.0	4.6	11.4		
5 Lic/20 MHz	14.8	0.4	17.1	20.4	13.0
Dallas					
2 Lic/40 MHz	8.5	18.4			
3 Lic/30 MHz	17.1	13.0	23.8		
5 Lic/20 MHz	36.6	15.0	30.4	49.9	28.6
Houston					
2 Lic/40 MHz	18.2	21.4			
3 Lic/30 MHz	25.8	21.0	30.2		
5 Lic/20 MHz	37.8	38.2	34.2	46.1	26.2
Miami					
2 Lic/40 MHz	8.7	11.7			
3 Lic/30 MHz	11.7	16.0	10.2		
5 Lic/20 MHz	27.1	17.8	36.2	25.7	24.5
San Francisco					
2 Lic/40 MHz	20.4	15.3			
3 Lic/30 MHz	27.4	24.5	22.3		
5 Lic/20 MHz	44.4	33.3	33.7	31.8	36.2

Percentage of Areas with No Spectrum Available for PCS

One "worst case" microwave link relocated

	Licensee A	Licensee B	Licensee C	Licensee D	Licensee E
New York					
2 Lic/40 MHz	9.9	3.4			
3 Lic/30 MHz	18.7	5.6	17.4		
5 Lic/20 MHz	29.8	3.6	5.9	25.1	20.1
Los Angeles					
2 Lic/40 MHz	16.6	25.5			
3 Lic/30 MHz	24.2	22.0	33.8		
5 Lic/20 MHz	34.6	46.4	30.4	50.3	38.2
Chicago					
2 Lic/40 MHz	14.0	23.1			
3 Lic/30 MHz	16.2	26.4	33.2		
5 Lic/20 MHz	22.6	23.9	37.6	46.2	25.6
Washington, D.C.					
2 Lic/40 MHz	0.0	2.1			
3 Lic/30 MHz	0.8	5.0	0.8		
5 Lic/20 MHz	7.8	0.2	8.0	0.8	0.6
Philadelphia					
2 Lic/40 MHz	0.6	3.4			
3 Lic/30 MHz	7.0	4.0	16.8		
5 Lic/20 MHz	5.0	0.6	2.4	22.4	17.4
Detroit					
2 Lic/40 MHz	4.8	0.0			
3 Lic/30 MHz	5.3	6.5	0.3		
5 Lic/20 MHz	15.5	10.5	10.3	0.3	0.0
Boston					
2 Lic/40 MHz	0.4	4.9			
3 Lic/30 MHz	2.3	0.0	4.8		
5 Lic/20 MHz	6.9	0.0	0.0	6.5	4.4
Dallas					
2 Lic/40 MHz	3.4	14.6			
3 Lic/30 MHz	9.3	6.9	16.8		
5 Lic/20 MHz	26.7	6.4	19.5	39.2	16.0
Houston					
2 Lic/40 MHz	16.2	19.5			
3 Lic/30 MHz	21.4	17.1	28.3		
5 Lic/20 MHz	32.6	34.1	28.6	44.0	23.0
Miami					
2 Lic/40 MHz	6.4	11.4			
3 Lic/30 MHz	6.4	12.2	5.5		
5 Lic/20 MHz	11.1	16.0	21.9	19.0	9.6
San Francisco					
2 Lic/40 MHz	18.7	13.8			
3 Lic/30 MHz	24.8	20.9	12.4		
5 Lic/20 MHz	40.8	23.3	25.7	19.7	19.7

Percentage of Areas with No Spectrum Available for PCS

Two "worst case" microwave links relocated

	Licensee A	Licensee B	Licensee C	Licensee D	Licensee E
New York					
2 Lic/40 MHz	3.8	2.9			
3 Lic/30 MHz	8.6	4.5	11.3		
5 Lic/20 MHz	17.1	3.2	5.0	13.8	15.1
Los Angeles					
2 Lic/40 MHz	13.4	20.7			
3 Lic/30 MHz	16.6	19.2	28.1		
5 Lic/20 MHz	26.2	38.3	25.2	42.4	36.0
Chicago					
2 Lic/40 MHz	7.6	19.0			
3 Lic/30 MHz	9.1	23.6	28.9		
5 Lic/20 MHz	10.2	17.0	27.2	41.9	19.8
Washington, D.C.					
2 Lic/40 MHz	0.0	0.8			
3 Lic/30 MHz	0.0	1.8	0.8		
5 Lic/20 MHz	3.7	0.2	4.8	0.8	0.6
Philadelphia					
2 Lic/40 MHz	0.6	2.1			
3 Lic/30 MHz	2.1	1.1	9.9		
5 Lic/20 MHz	0.0	0.6	2.4	14.9	6.7
Detroit					
2 Lic/40 MHz	1.2	0.0			
3 Lic/30 MHz	0.3	5.0	0.0		
5 Lic/20 MHz	4.1	4.8	8.6	0.0	0.0
Boston					
2 Lic/40 MHz	0.0	0.0			
3 Lic/30 MHz	0.0	0.0	2.1		
5 Lic/20 MHz	0.0	0.0	0.0	0.9	1.1
Dallas					
2 Lic/40 MHz	2.2	6.6			
3 Lic/30 MHz	4.8	1.8	13.6		
5 Lic/20 MHz	12.3	6.1	5.3	32.3	11.0
Houston					
2 Lic/40 MHz	15.0	17.8			
3 Lic/30 MHz	18.2	15.7	25.0		
5 Lic/20 MHz	25.9	31.0	20.6	39.0	17.1
Miami					
2 Lic/40 MHz	6.4	6.7			
3 Lic/30 MHz	6.4	7.9	2.9		
5 Lic/20 MHz	1.5	16.0	14.3	12.2	9.6
San Francisco					
2 Lic/40 MHz	11.2	10.2			
3 Lic/30 MHz	23.1	16.3	6.8		
5 Lic/20 MHz	35.0	21.8	21.1	12.4	11.9

Percentage of Areas with No Spectrum Available for PCS

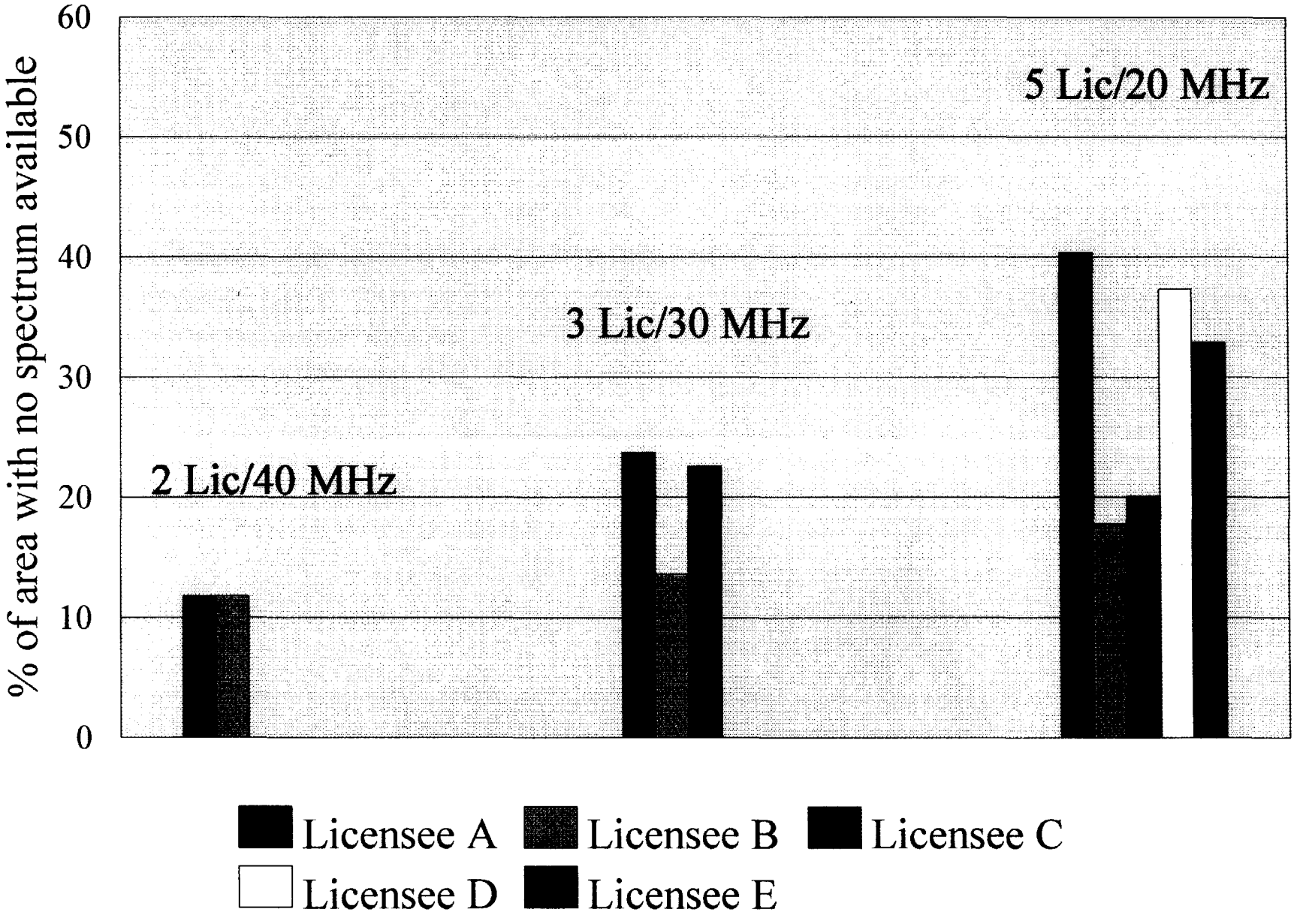
Three "worst case" microwave links relocated

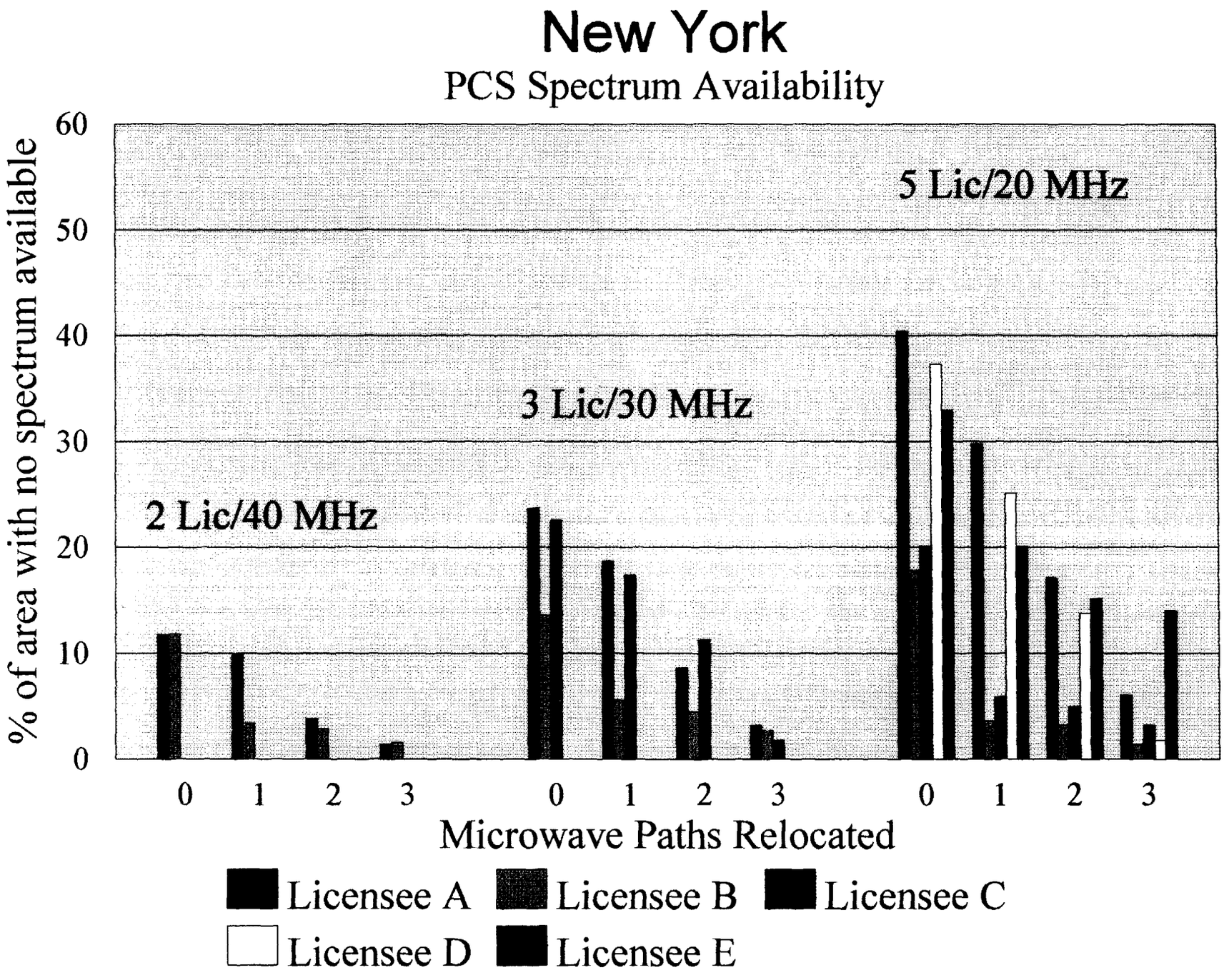
	Licensee A	Licensee B	Licensee C	Licensee D	Licensee E
New York					
2 Lic/40 MHz	1.4	1.6			
3 Lic/30 MHz	3.2	2.7	1.8		
5 Lic/20 MHz	6.1	1.4	3.2	1.8	14.0
Los Angeles					
2 Lic/40 MHz	11.3	16.1			
3 Lic/30 MHz	13.6	16.0	22.9		
5 Lic/20 MHz	22.7	29.7	20.2	32.8	29.1
Chicago					
2 Lic/40 MHz	7.6	16.5			
3 Lic/30 MHz	2.0	21.8	26.1		
5 Lic/20 MHz	2.0	11.9	22.6	36.0	12.4
Washington, D.C.					
2 Lic/40 MHz	0.0	0.3			
3 Lic/30 MHz	0.0	0.3	0.0		
5 Lic/20 MHz	1.8	0.2	0.5	0.0	0.2
Philadelphia					
2 Lic/40 MHz	0.0	1.4			
3 Lic/30 MHz	0.6	0.6	4.8		
5 Lic/20 MHz	0.0	0.6	1.9	5.6	1.6
Detroit					
2 Lic/40 MHz	0.0	0.0			
3 Lic/30 MHz	0.3	0.5	0.0		
5 Lic/20 MHz	4.1	1.5	5.7	0.0	0.0
Boston					
2 Lic/40 MHz	0.0	0.0			
3 Lic/30 MHz	0.0	0.0	0.0		
5 Lic/20 MHz	0.0	0.0	0.0	0.0	1.1
Dallas					
2 Lic/40 MHz	0.0	1.1			
3 Lic/30 MHz	0.0	1.0	6.2		
5 Lic/20 MHz	0.0	5.0	0.8	20.0	7.4
Houston					
2 Lic/40 MHz	13.0	15.0			
3 Lic/30 MHz	15.7	13.9	23.8		
5 Lic/20 MHz	17.8	27.5	17.3	35.2	13.4
Miami					
2 Lic/40 MHz	1.5	5.5			
3 Lic/30 MHz	1.5	5.5	1.2		
5 Lic/20 MHz	1.5	8.2	5.5	12.0	9.3
San Francisco					
2 Lic/40 MHz	10.9	8.3			
3 Lic/30 MHz	16.3	12.1	4.9		
5 Lic/20 MHz	27.9	16.7	15.0	9.7	6.1

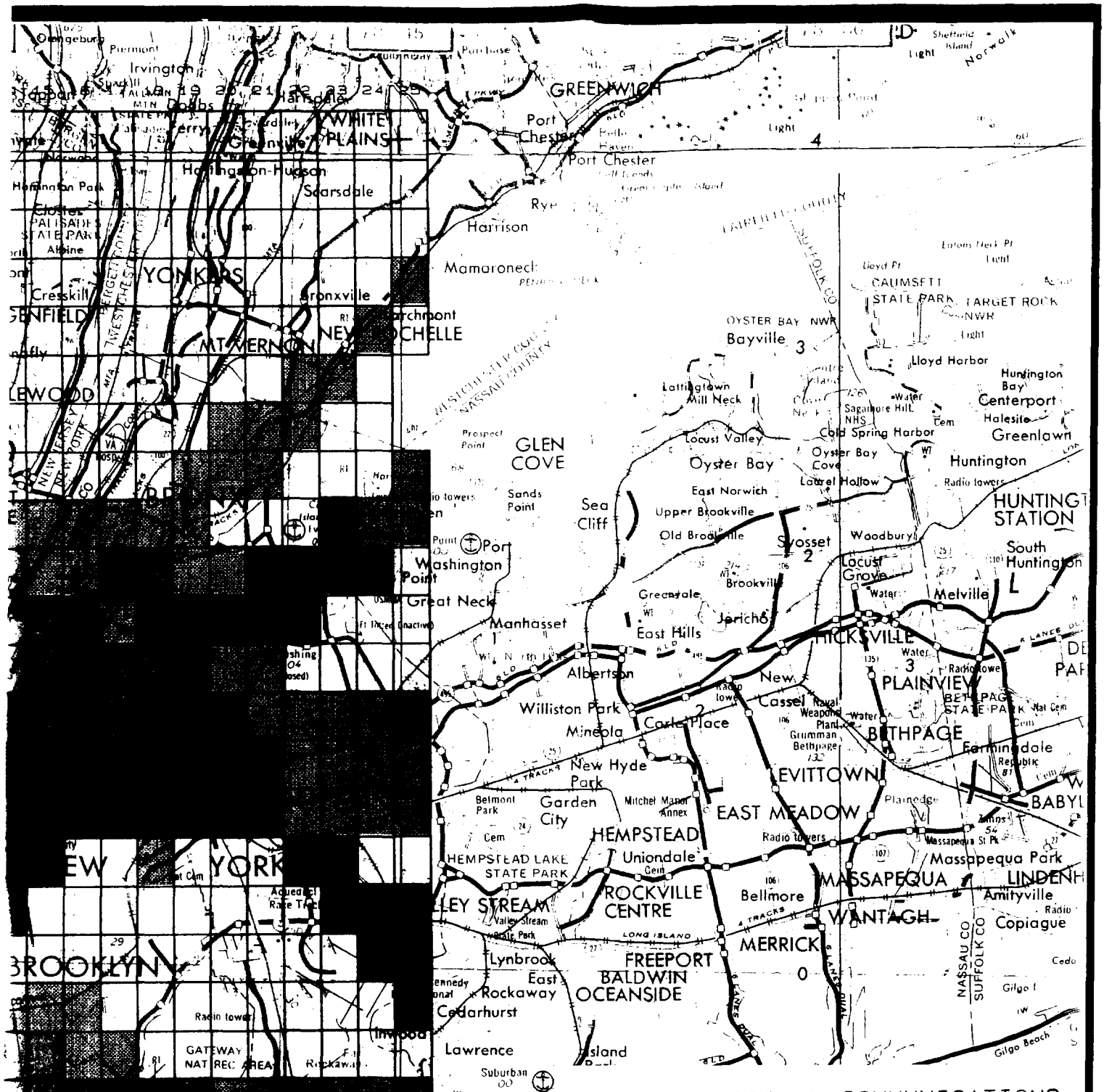
New York

New York

PCS Spectrum Availability




New York
PCS Spectrum Availability
% of area with no spectrum available
60
50
40
30
20
10
0
5 Lic/20 MHz
3 Lic/30 MHz
2 Lic/40 MHz
0 1 2 3 0 1 2 3 0 1 2 3
Microwave Paths Relocated
Licensee A
Licensee B
Licensee C
Licensee D
Licensee E



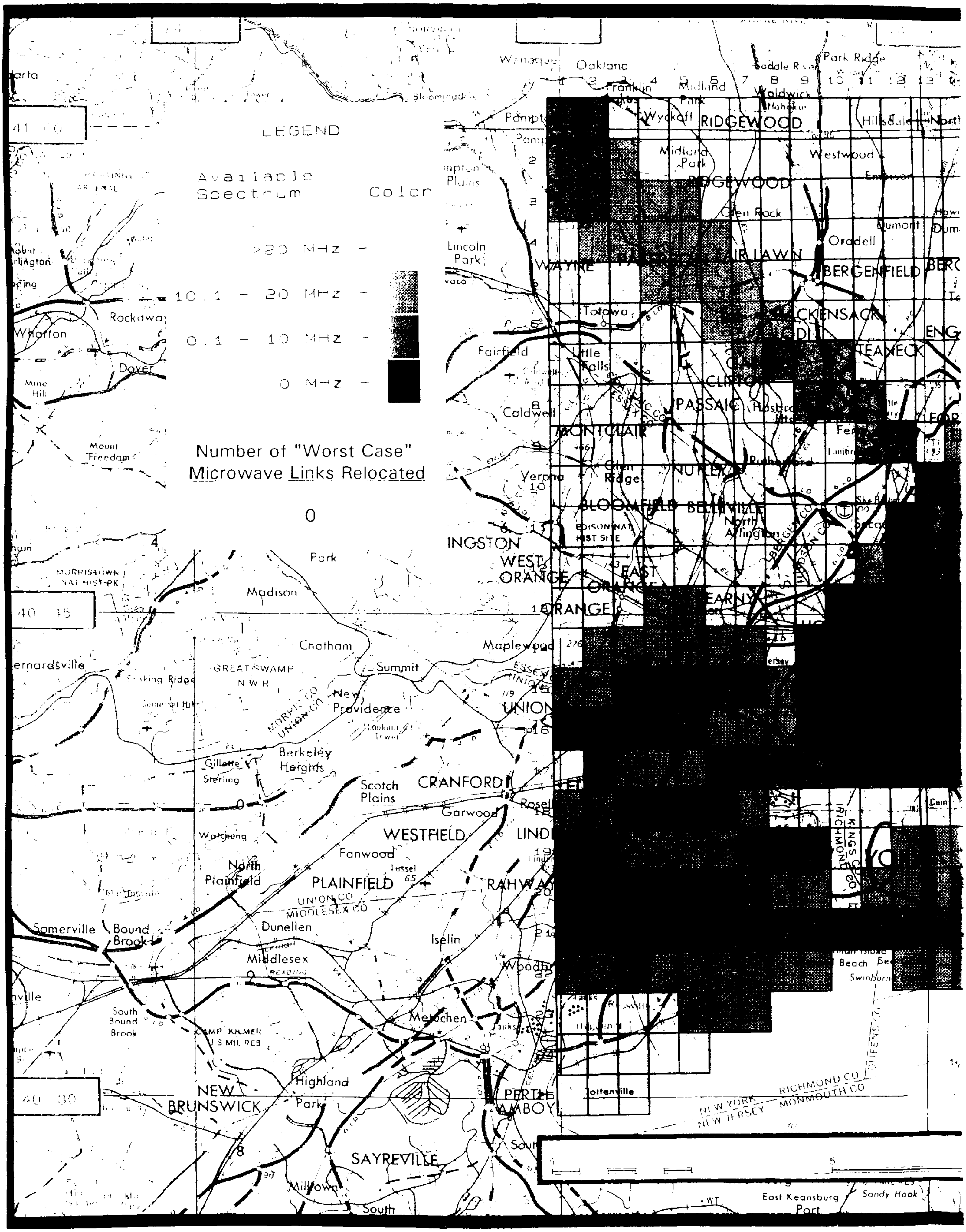
AMERICAN PERSONAL COMMUNICATIONS

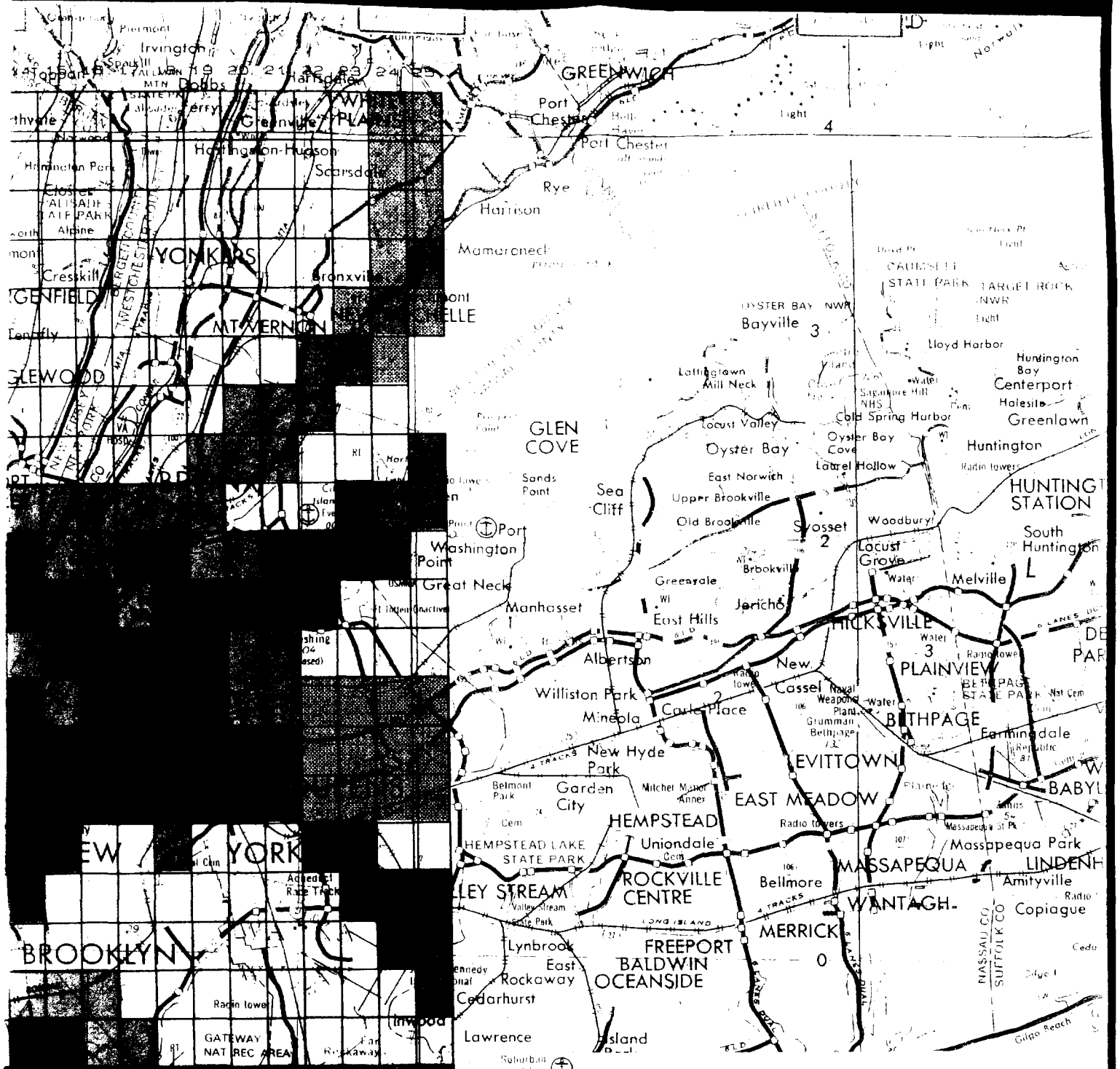
Licensee A Spectrum Availability

2 Lic/Mrkt and 40 MHz/Lic

New York

10/19/92


LEGEND
Available Spectrum
Color
>20 MHz -
10.1 - 20 MHz -
0.1 - 10 MHz -
0 MHz -
Number of "Worst Case"
Microwave Links Relocated
0
Oakland
Franklin Lakes
Midland Park
Waldwick
Wyckoff
RIDGEWOOD
Park Ridge
Westwood
Hillsdale
Emerson
Glen Rock
Oradell
Dumont
FAIR LAWN
BERGENFIELD
WAYNE
Totowa
TEANECK
Little Falls
CLIFTON
PASSAIC
MONTCLAIR
NUTLEY
Glen Ridge
Rutherford
BLOOMFIELD
BELLEVILLE
North Arlington
EDISON NAT HIST SITE
WEST ORANGE
EAST ORANGE
ORANGE
KEARNY
Verona
Caldwell
Fairfield
Lincoln Park
Rockaway
Wharton
Dover
Mine Hill
Mount Freedom
MORRISTOWN NAT HIST PK
Madison
Chatham
Summit
Maplewood
Bernardsville
GREAT SWAMP N W R
New Providence
UNION
Berkeley Heights
Gillette
Stirling
Scotch Plains
CRANFORD
Garwood
WESTFIELD
Watchung
Fanwood
North Plainfield
PLAINFIELD
RAHWAY
UNION CO
MIDDLESEX CO
Dunellen
Iselin
Somerville
Bound Brook
Middlesex
South Bound Brook
CAMP KILMER U S MIL RES
Metuchen
Highland Park
NEW BRUNSWICK
PERTH AMBOY
SAYREVILLE
Milltown
South
Tottenville
RICHMOND CO
KINGS CO
RICHMOND CO
NEW YORK
NEW JERSEY
MONMOUTH CO
East Keansburg
Sandy Hook
Swinburne



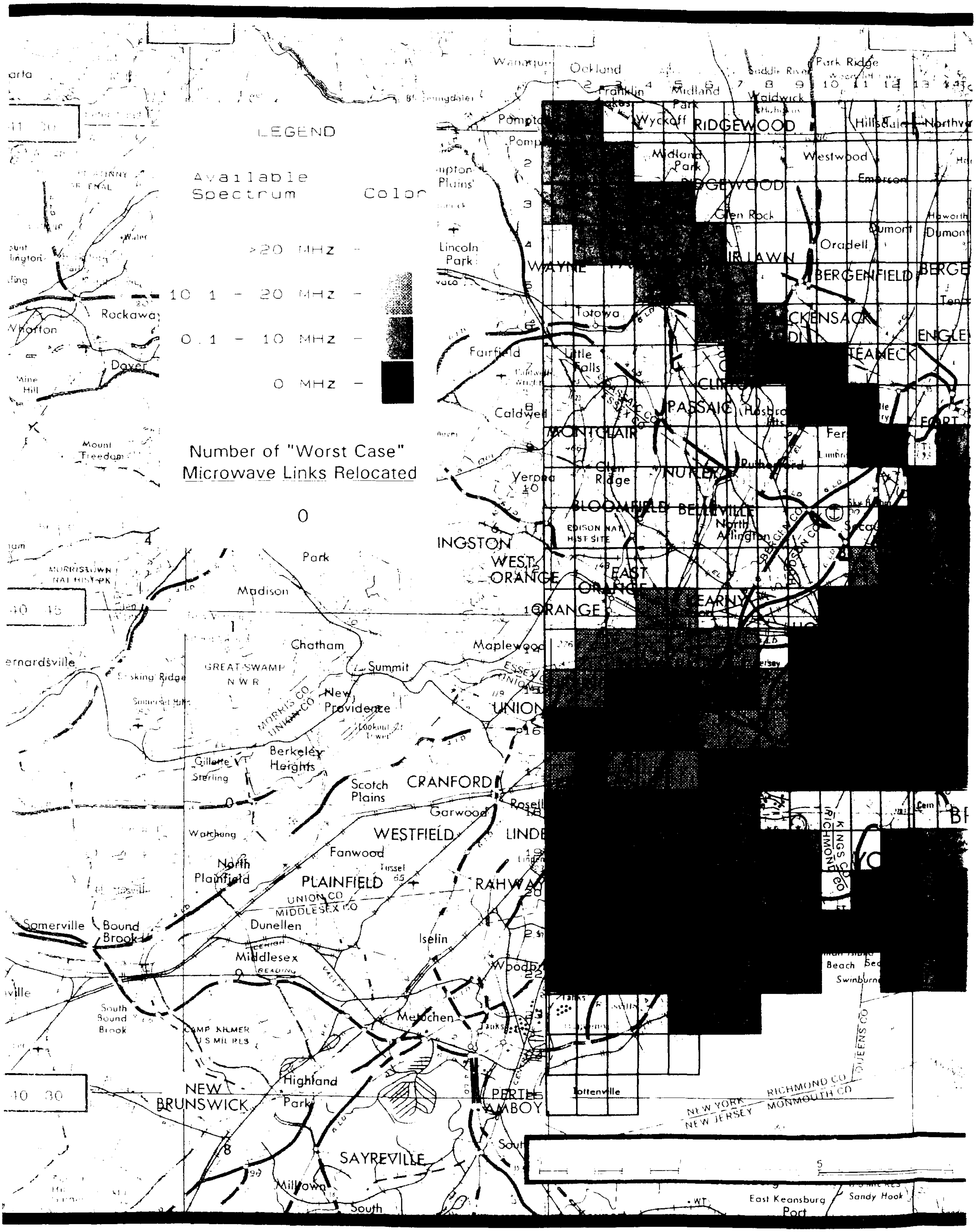
AMERICAN PERSONAL COMMUNICATIONS

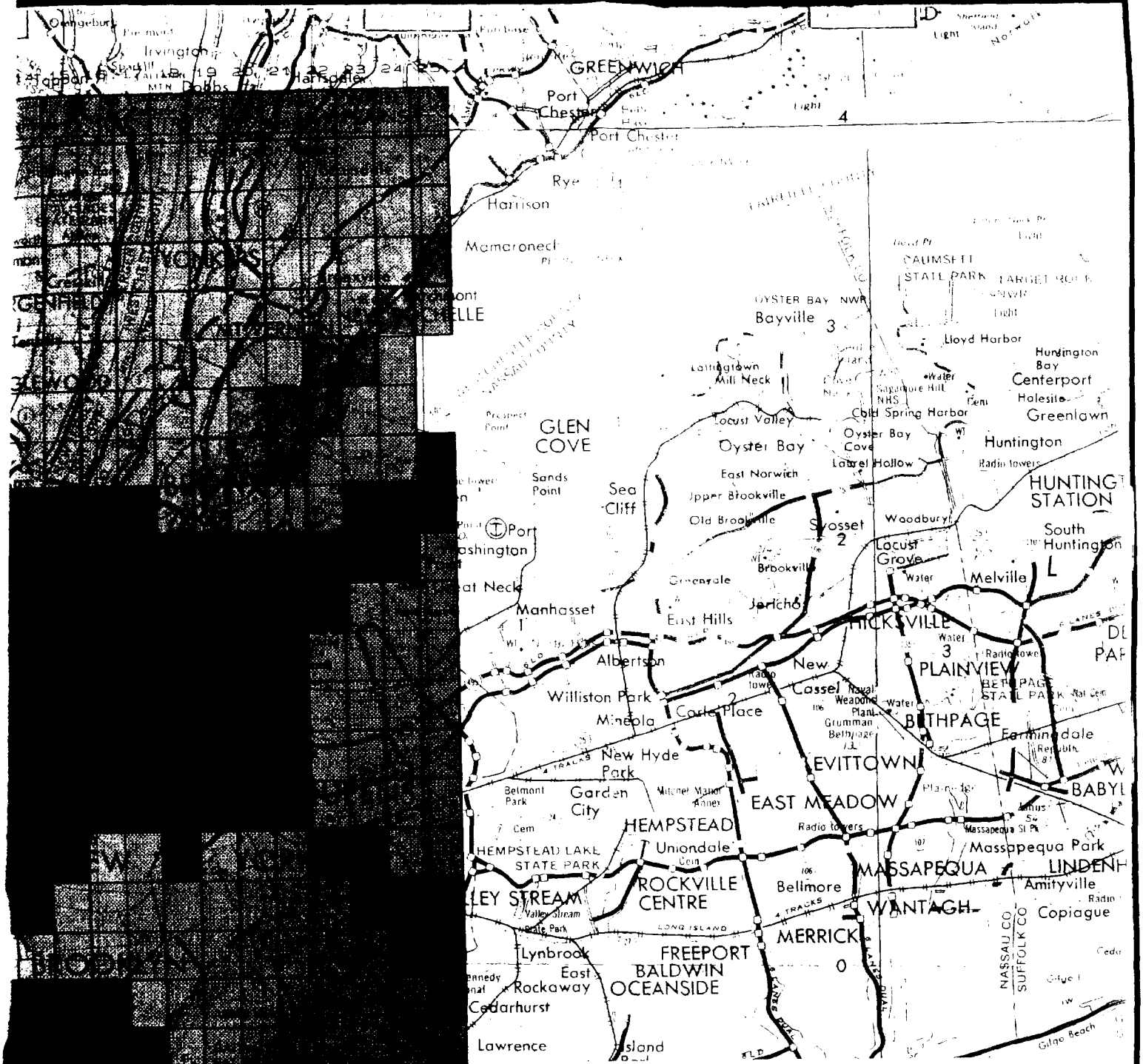
Licensee A Spectrum Availability

3 Lic/Mrkt and 30 MHz/Lic

New York

10/19/92


LEGEND
Available Spectrum
Color
>20 MHz
10.1 - 20 MHz
0.1 - 10 MHz
0 MHz
Number of "Worst Case"
Microwave Links Relocated
0
RIDGEWOOD
Westwood
Glen Rock
Oradell
BERGENFIELD
TEANECK
WAYNE
Totowa
Fairfield
Little Falls
PASSAIC
MONTCLAIR
Caldwell
Glen Ridge
BLOOMFIELD
BELLEVILLE
North Arlington
WEST ORANGE
EAST ORANGE
ORANGE
Maplewood
UNION
CRANFORD
WESTFIELD
PLAINFIELD
Scotch Plains
Garwood
Fanwood
Berkeley Heights
New Providence
Summit
Chatham
Madison
Morristown Natl Hist Pk
Rockaway
Wharton
Dover
Lincoln Park
Bernardsville
Somerville
Bound Brook
Dunellen
Middlesex
Iselin
Metuchen
Highland Park
NEW BRUNSWICK
PERTH AMBOY
SAYREVILLE
Milltown
Tottenville
NEW YORK
NEW JERSEY
RICHMOND CO
MONMOUTH CO
QUEENS CO
KINGS CO
RICHMOND CO
East Keansburg
Sandy Hook
40 45
40 30



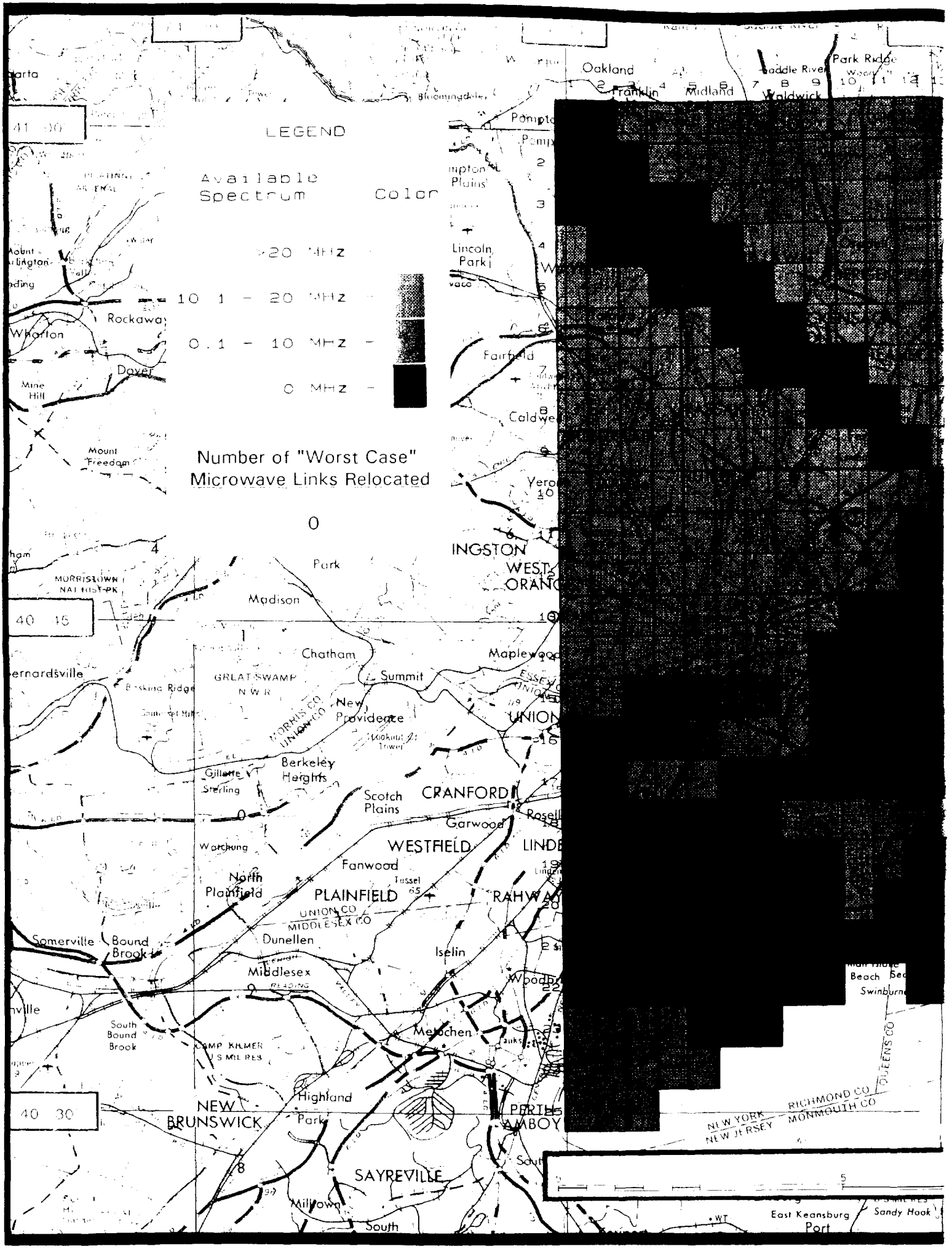
AMERICAN PERSONAL COMMUNICATIONS

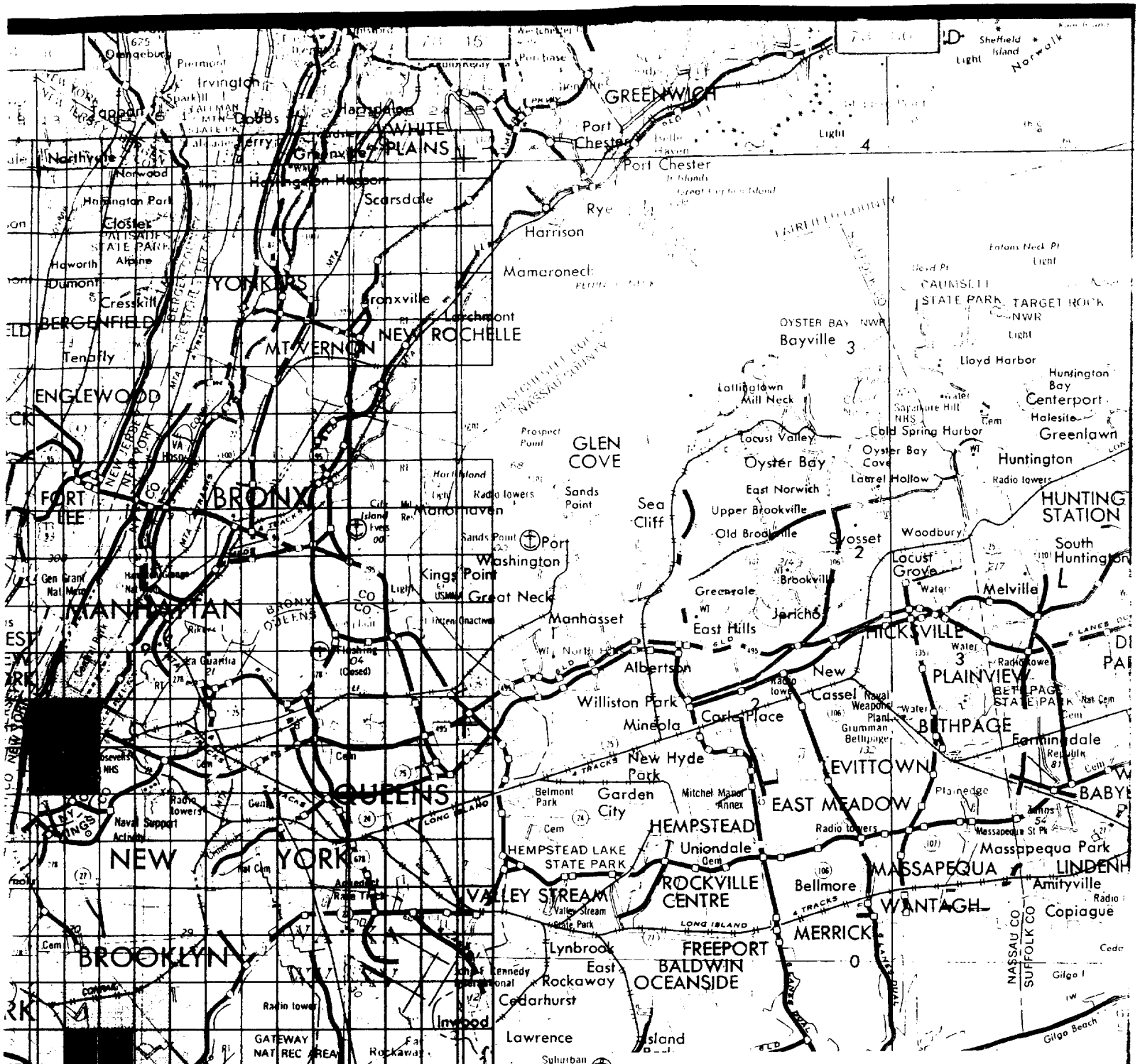
Licensee A Spectrum Availability

5 Lic/Mrkt and 20 MHz/Lic

New York

10/19/92


LEGEND
Available Spectrum Color
>20 MHz
10.1 - 20 MHz
0.1 - 10 MHz
0 MHz
Number of "Worst Case" Microwave Links Relocated
0
Oakland
Franklin
Midland
Waldwick
Park Ridge
Pompton Plains
Lincoln Park
Rockaway
Wharton
Dover
Mine Hill
Fairfield
Mount Freedom
Morristown Nat Hist Pk
Madison
Park
Chatham
Summit
Maplewood
Great Swamp N W R
New Providence
Berkeley Heights
Gillette
Sterling
Scotch Plains
Cranford
Garwood
Westfield
Fanwood
North Plainfield
Plainfield
Rahway
Union Co
Middlesex Co
Somerville
Bound Brook
Dunellen
Iselin
Middlesex
South Bound Brook
Camp Kilmer
Metuchen
New Brunswick
Highland Park
Perth Amboy
Sayreville
Milltown
South
Beach
Swinburne
Queens Co
Richmond Co
Monmouth Co
New York
New Jersey
East Keansburg
Sandy Hook
Port
40 45
40 30



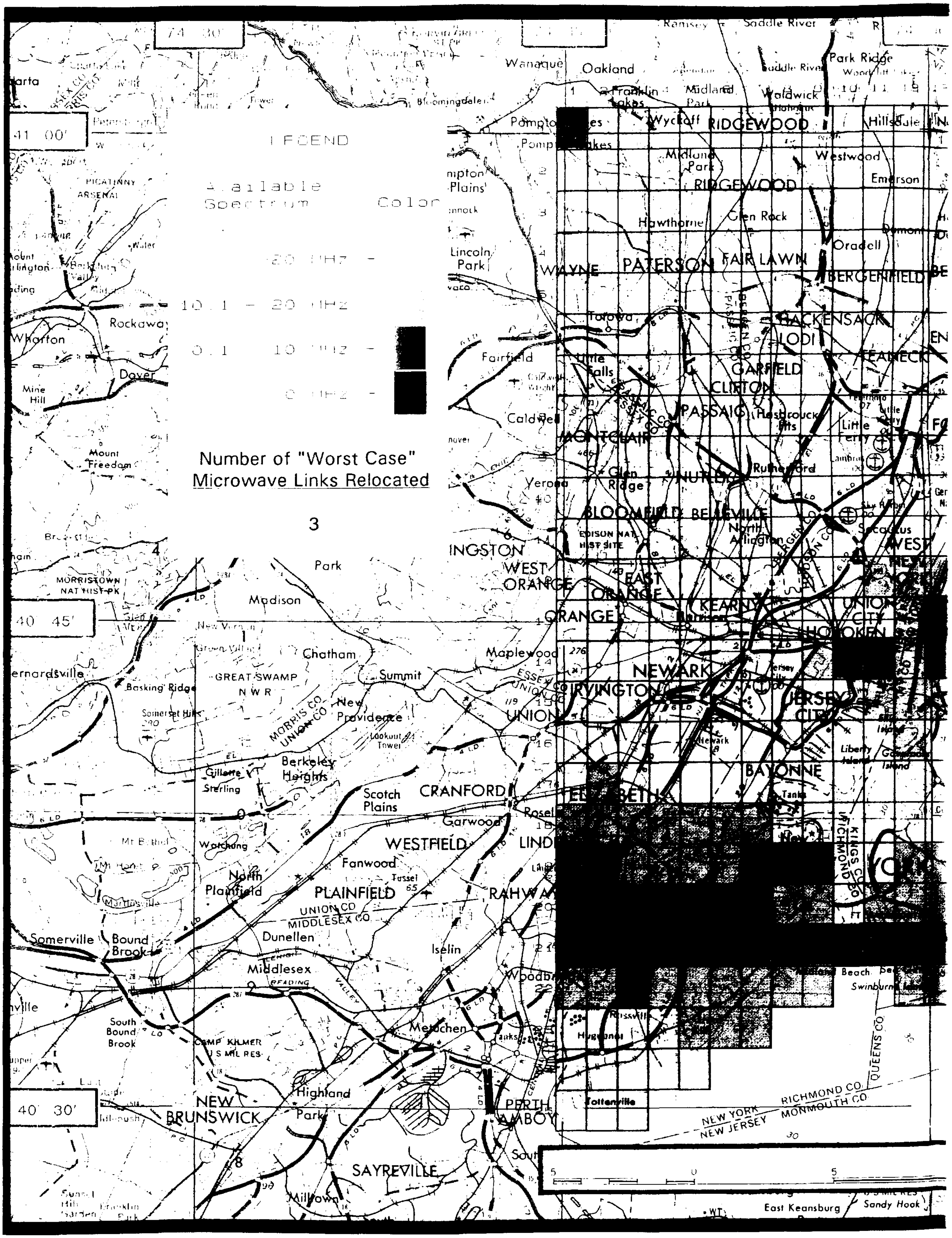
AMERICAN PERSONAL COMMUNICATIONS

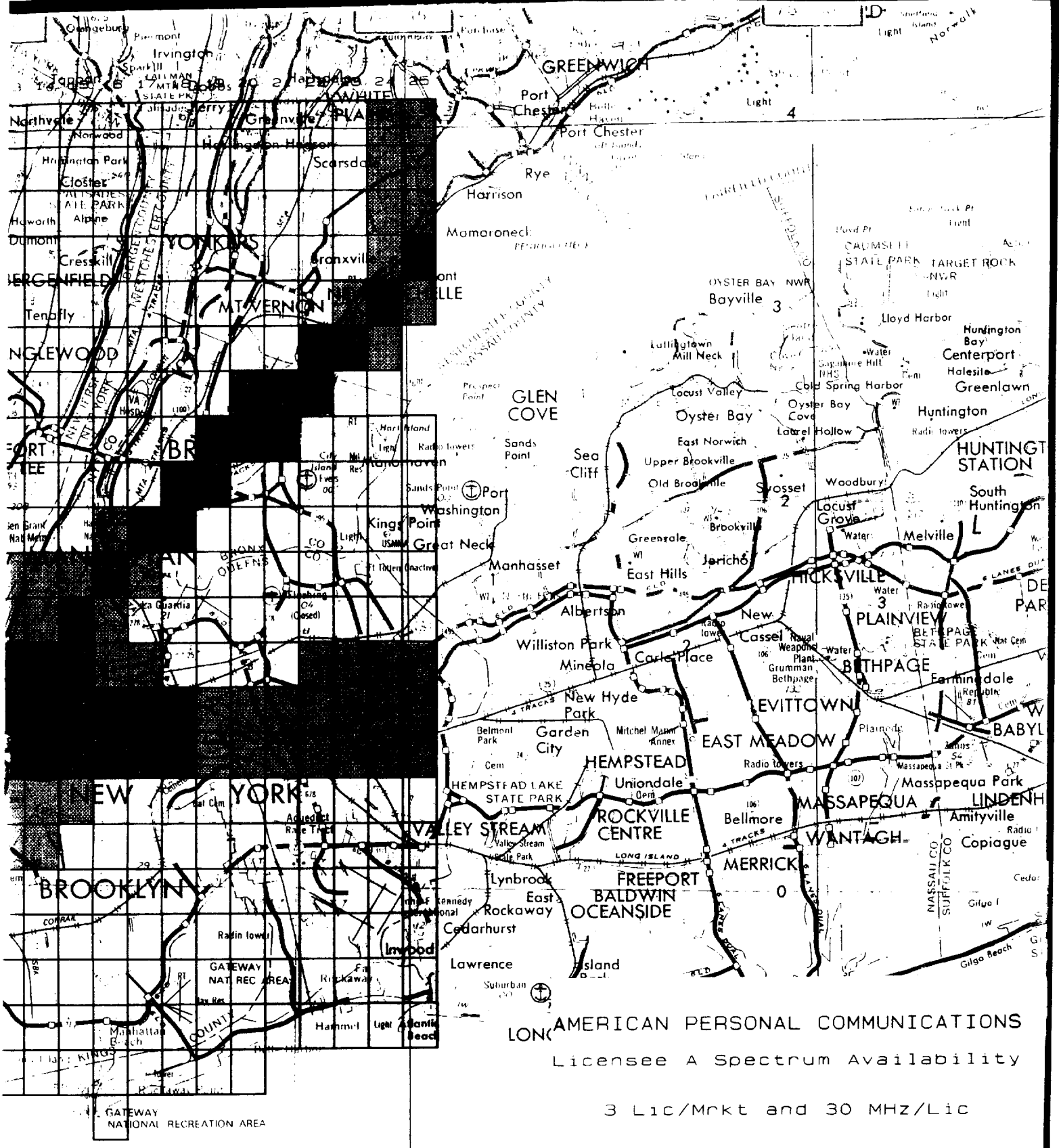
Licensee A Spectrum Availability

2 Lic/Mrkt and 40 MHz/Lic

New York

10/29/92


LEGEND
Available Spectrum Color
20 MHz
10.1 - 20 MHz
0.1 - 10 MHz
0 MHz
Number of "Worst Case" Microwave Links Relocated
3
74° 30'
41° 00'
40° 45'
40° 30'
Wanaque
Oakland
Franklin Lakes
Wyckoff
RIDGEWOOD
Midland Park
Waldwick
Park Ridge
Westwood
Emerson
Hawthorne
Glen Rock
Oradell
WAYNE
PATERSON
FAIR LAWN
BERGENFIELD
Totowa
HACKENSACK
LODI
TEANECK
Little Falls
GARFIELD
CLIFTON
PASSAIC
Hasbrouck Hts
Little Ferry
MONTCLAIR
Glen Ridge
NUTLEY
Rutherford
BLOOMFIELD
BELLEVILLE
North Arlington
Secaucus
EDISON NAT HIST SITE
EAST ORANGE
WEST ORANGE
ORANGE
KEARNY
UNION CITY
HOBOKEN
NEWARK
IRVINGTON
JERSEY CITY
UNION
BAYONNE
Liberty Island
Governors Island
ELIZABETH
Roselle
Garwood
CRANFORD
WESTFIELD
LINDEN
RAHWAY
Fanwood
PLAINFIELD
Scotch Plains
North Plainfield
Dunellen
Iselin
Middlesex
Metuchen
Woodbridge
Rossville
Huguenot
Tottenville
PERTH AMBOY
NEW BRUNSWICK
Highland Park
SAYREVILLE
Milltown
South Bound Brook
Bound Brook
Somerville
CAMP KILMER U S MIL RES
Berkeley Heights
Gillette
Sterling
Watchung
Martinsville
New Providence
Summit
Chatham
Madison
Maplewood
GREAT SWAMP N W R
Basking Ridge
Bernardsville
Somerset Hills
MORRISTOWN NAT HIST PK
Mount Freedom
Dover
Wharton
Rockaway
Mine Hill
PICATINNY ARSENAL
Mount Arlington
Pompton Lakes
Pompton Plains
Lincoln Park
Fairfield
Caldwell
Verona
LIVINGSTON
Pequannock
Bloomingdale
Ramsey
Saddle River
MORRIS CO
UNION CO
MIDDLESEX CO
ESSEX CO
RICHMOND CO
QUEENS CO
KINGS CO
MONMOUTH CO
NEW YORK
NEW JERSEY
East Keansburg
Sandy Hook
Swinburne Island
Midland Beach



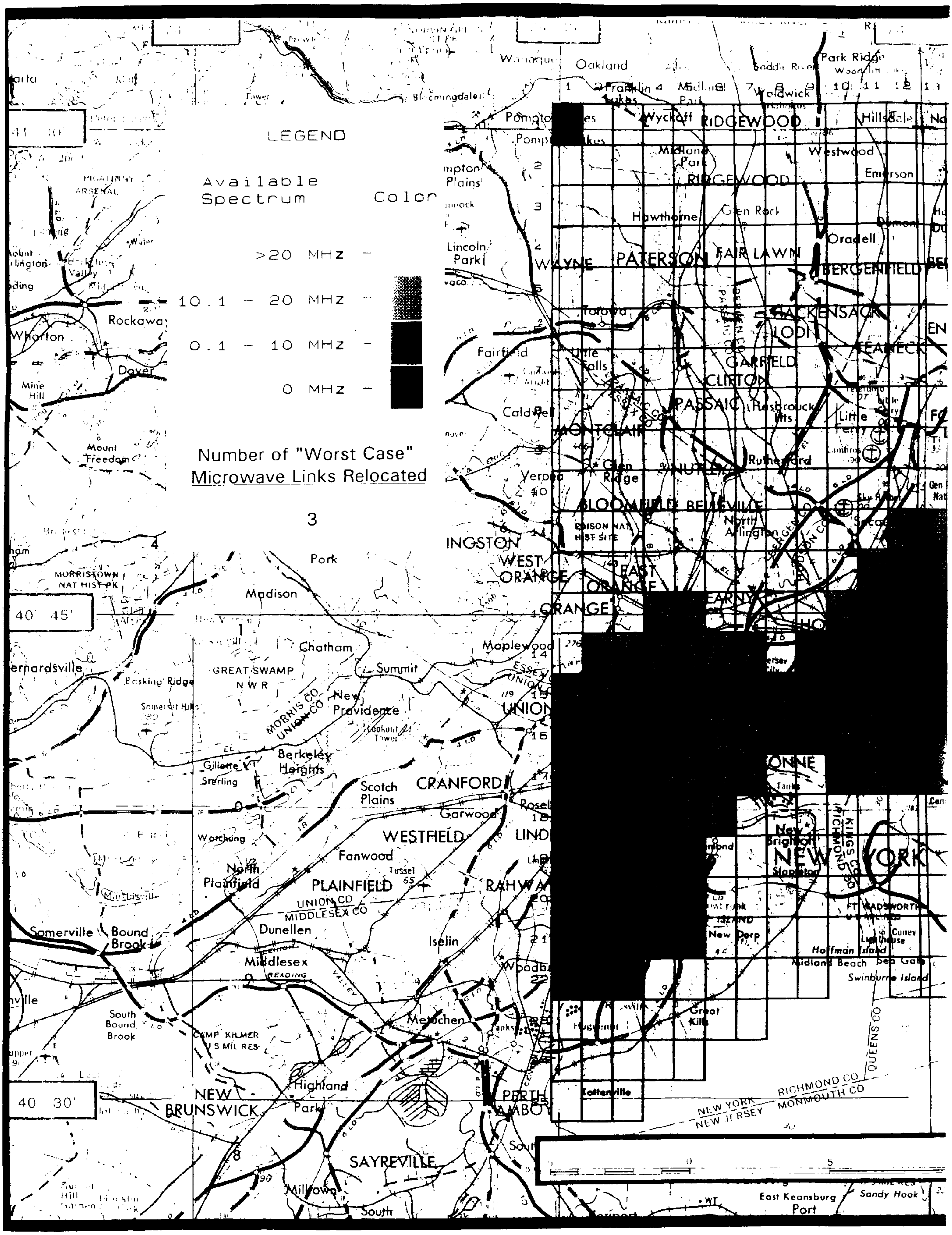
AMERICAN PERSONAL COMMUNICATIONS

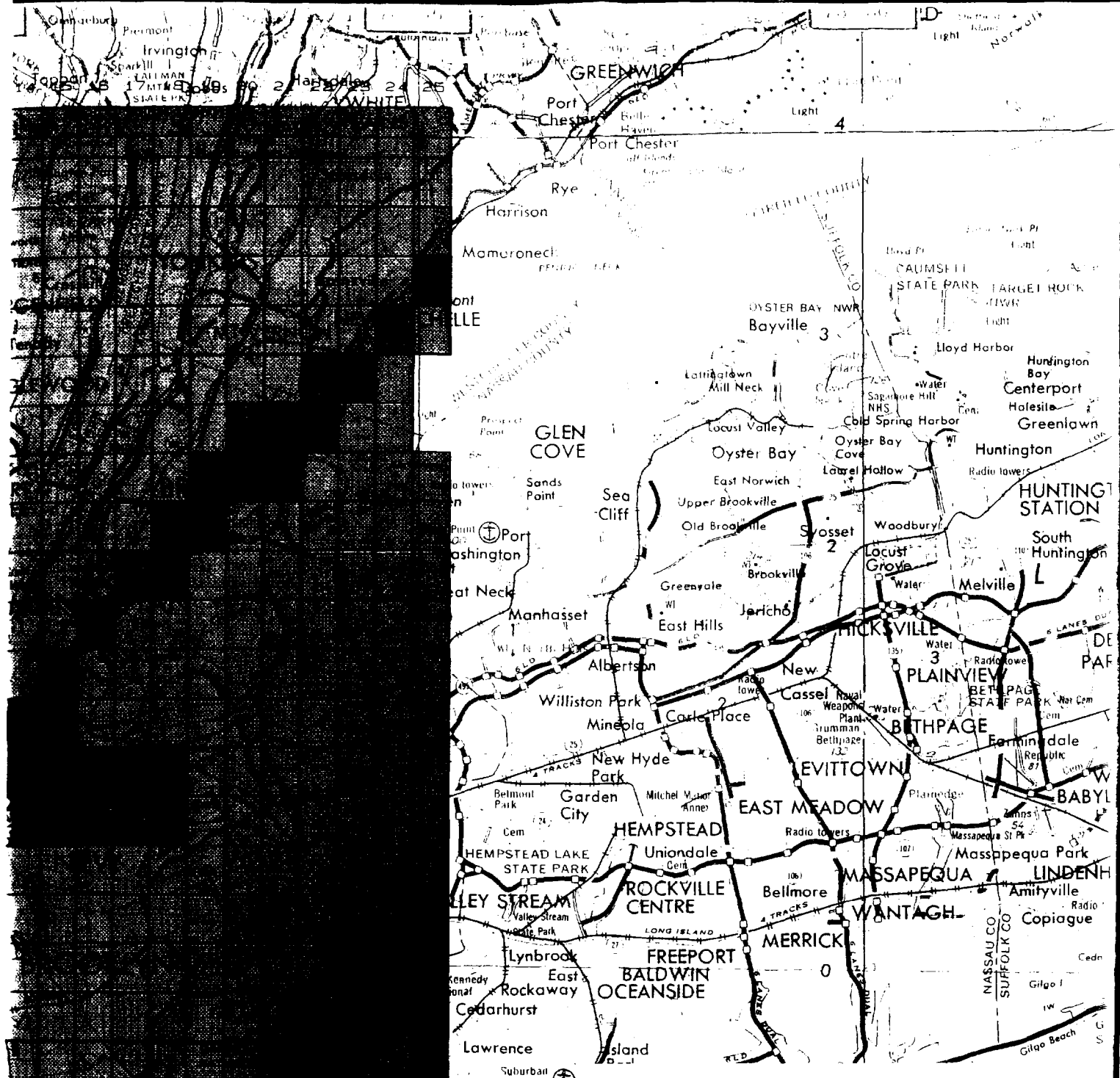
Licensee A Spectrum Availability

3 Lic/Mrkt and 30 MHz/Lic

New York

10/29/92


LEGEND
Available Spectrum
Color
>20 MHz
10.1 - 20 MHz
0.1 - 10 MHz
0 MHz
Number of "Worst Case" Microwave Links Relocated
3
40 45'
40 30'
PATERSON
RIDGEWOOD
HACKENSACK
PASSAIC
CLIFTON
BLOOMFIELD
BELLEVILLE
WEST ORANGE
EAST ORANGE
CRANFORD
WESTFIELD
PLAINFIELD
NEW BRUNSWICK
SAYREVILLE
NEW YORK
NEW YORK
NEW JERSEY
RICHMOND CO
MONMOUTH CO



AMERICAN PERSONAL COMMUNICATIONS

Licensee A Spectrum Availability

5 Lic/Mrkt and 20 MHz/Lic

New York

10/29/92